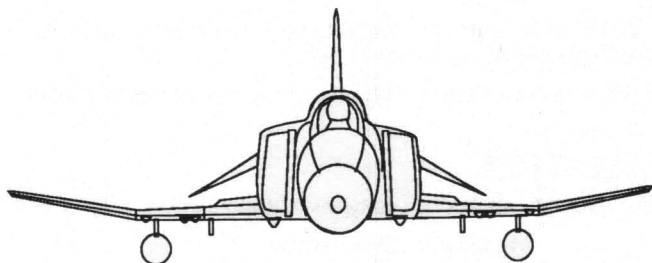


FLIGHT [REDACTED] OF THE [REDACTED] INTRUDER™

**SPECIAL INSTALLATION INSTRUCTIONS
AND ADDENDUM**



**PERSONNEL AND COMMUNICATIONS
MANUAL**

FINAL BRIEFING ON INSTALLATION

To install the CGA/Hercules version to a hard drive:

- ✦ Copy all the files from either the 360K Disk 1 for CGA or the 720K Disk for CGA to a subdirectory.

To install the EGA or VGA version of this game on your hard disk:

- ✦ Insert the 1.2MB Disk or the 720K Disk 1 for EGA/VGA into the floppy drive.
- ✦ Change to the drive and directory where you want to install the game. Be sure to go to the exact directory you want the game to reside in. For example, If you have a GAMES directory, then type C: and then CD\GAMES. Of course, you can just install it directly on drive C.
- ✦ Type A: INSTALL at the C>. **You cannot run the install program from drive A.**
- ✦ Follow the instructions on your screen to select the appropriate source drive, graphics mode and destination path. When finished, the installation will create a subdirectory called INTRUDER on the drive and directory you have indicated.

PLAYING FROM THE FLOPPIES

To play the CGA or Hercules version from the disks:

- ✦ Insert the 360K Disk 1 for CGA or the 720K Disk for CGA into a drive and type INTRUDER or HINTRUDER for Hercules. If you are playing from 360K disks, you need to swap disks or use two floppy drives.

To play the EGA version from the disks:

- ✦ Insert the 1.2MB Disk or the 720K Disk 1 for EGA/VGA into the appropriate drive.
- ✦ Type INTRUDER. If you are playing from one 3½" disk drive, you will be prompted to insert Disk 2 midway through loading. You can also play the game from two 3½" disk drives

You cannot play the VGA version from the disks provided. You must install it on your hard drive or other high-density media; see above

If you need a format other than those provided, please see the enclosed coupon.

SOUND INSTALLATION

On the **File Menu** you have the choice of three types of sound.

AdLib	Minimum 12MHz 80286
Digitized	Minimum 12MHz 80286
PC Tone	Anything else

For the AdLib sound, use amplified speakers to hear the sound effects clearly. The CGA/Hercules version supports only PC Tone sound. If you want no sound at all, select the "All Sound Off" option from the **Control Menu**. [S] toggles through the **Control Menu** sound options at any time.

STARTING THE GAME

Correction for Page 12: on the Duty Roster Screen, you must enter your callsign before entering your name.

PROBLEMS WITH INSTALLATION?

If you are having problems running Flight of the Intruder, please try the following.

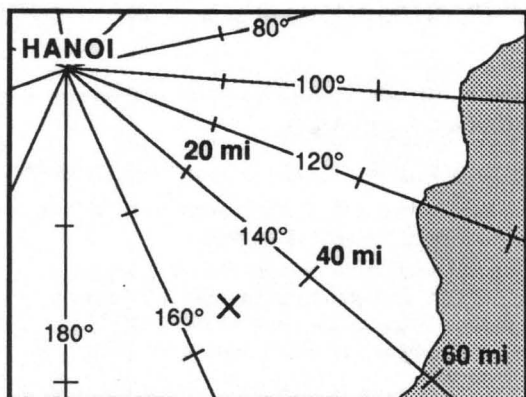
1. You'll need to run CHKDSK, a DOS utility, first to determine how much free RAM you have available. Type CHKDSK at the DOS prompt.
2. The bottom two lines on your screen will show the total memory in your computer and the amount of memory available to the game. The number on the last line needs to be at least 540,000 in order for Flight Of The Intruder to run. Otherwise, when you type INTRUDER the game will simply return to the DOS prompt.
3. Remember that RAM-resident programs, menu programs, DOS shells, TSRs (Terminate-and-Stay-Resident), print spoolers, buffers, mouse drivers, network drivers, and other programs can use up part of your total available RAM. If you do not have at least 540K free RAM, you need to do **one** of the following:
 - a. Create a bootable floppy disk by inserting a blank disk in drive A and typing `FORMAT A: /S`. (FORMAT is another DOS utility program). This makes a clean system disk. If you want to use your mouse, you must install the mouse driver to this system disk. To use the new disk, turn your machine off and reboot with the new system disk in drive A. Then run Flight of the Intruder by going to the drive you have the game on and typing INTRUDER.
 - OR**
 - b. Rename your AUTOEXEC.BAT and CONFIG.SYS files to other names. For example, type `RENAME AUTOEXEC.BAT AUTOEXEC.BAK` and `RENAME CONFIG.SYS CONFIG.BAK`. Reboot your machine, and run CHKDSK again. If you have at least 540K free RAM, try running Flight of the Intruder by typing INTRUDER on the appropriate drive. Remember to rename the AUTOEXEC.BAT and CONFIG.SYS files back to their original names when you are through playing.

Extra Credit

AdLib and Digitized Sound: Lars Norpchen

Playtesters: Tom "Kansas City" Basham, Kasey "Wolverine" Chang, Anthony "Eraserhead" Chiang, Steve "Auger" Edwards, Mark "Endo" Estephanian, Bob "Extractor" Gong-Guy, Paul "Eagle-Eye" Jepson, Peter "Deathwish" Koning, Cheryl "Dr. Mabuse" Mathison, Karl "Crooked Cat" Maurer, Mike "Mongoose" Nebeker, Marisa "No. 19" Ong, Steve "White Knight" Perrin, Steve "Kingfish" Shirvanian, Peter "Bandit" Ward, Mike "Moondawg" Weksler and Bob "Phoenix" Wentzel

USING THE MAP



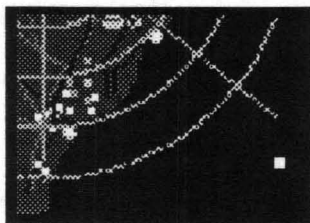
Enclosed with this game is a copy of an actual mission map used by an Air Force pilot over Vietnam. The objectives and map in this game were based on the original of this map.

Important on this map is the northern Bull's-Eye, centered on Hanoi. See page 44 for a full explanation of how this is used. In the illustration to the left, the "x," which represents a Bandit, is 153 degrees from Hanoi and

about 38 miles away (each tick mark is 20 nautical miles). Red Crown would call this as "Bandit, 153 at 38."

Remember that messages from Red Crown give you the **absolute** compass bearing of the bandit as reckoned from Bull's-Eye. Do not confuse this with the bearing of your target or waypoint as given on your radar screen (page 107). The bearing on your screen is a relative bearing. **It assumes the current heading of your plane is always 0° (zero)** and tells you how many degrees the bearing to the target/waypoint is away from that heading.

For example, if you are 50 miles from Hanoi in an F-4 and heading straight for Hanoi on the 153° line, the above bandit will show up on your radar at 0° and 12 miles. Alternately, if you are Jake Grafton flying 70 miles directly east of Hanoi and proceeding toward your waypoint over that city, the radar screen shows a bearing of 0° (instead of your compass bearing of 270°) and a distance of 70 miles to your waypoint.



Similarly, the bearings to your waypoints and the carrier (see A19) are bearings relative to your plane. If you change the waypoint to "Carrier," the bearing information is telling you how far off a direct line to the carrier you are.

For example, if the "Carrier" shows as having a bearing of 90°, it is directly to your right. If you bank right, the bearing will change until it reaches 0°, which means the bearing to the carrier is the same as your aircraft's heading. If you follow that line of direction without deviation, you will eventually get a bearing reading of 180° because you have flown over the carrier and it is now behind you.

AIRCREW PERSONNEL

In every mission, you get to pick the wing leader air crew that will actually fly and fight the mission for you. The name and callsign you chose at the start of the mission still gets the credit for the mission if you fly the plane; the team selected for the mission determines how well the planes in that wing will operate when in *automatic* mode. Each team starts with expertise in certain aspects of their mission; it is up to you to select the best team for the mission indicated, using the guidelines given below. The skills of the other aircrew in the section are the same as whichever crew is selected.

If you are in the cockpit when the mission is being flown, then your success or failure will affect the ratings of the air crew for future missions.

Assigning Plane Crews

- ✦ From the Briefing Screen, press **[A]** to go to the Aircraft Screen.
- ✦ Press **[C]** for Crews to get the list of available pilots. The lists will be different depending on whether you need a crew for the A-6 or for the F-4. Look over the list and find a pilot team that has the best ratings for their mission. Remember that the ratings given are for the team at their best. If they have had several recent sorties and have a high Fatigue rating, their actual ratings may be far less than those in their personnel record.
- ✦ Once you have decided which crew you want, press **[Enter]** to get back to the Aircraft Screen and then **[I]** to go to the Information Screen. Select the Crew line with **[↑]** and **[↓]** and use **[←]** and **[→]** to move to the crew you want. Select that crew by pressing **[Enter]**.

Replacing Pilot Teams

If a plane is shot down and the pilot lost, the crews will be replaced by a simple entry of New Guys (A), New Guys (B), etc.

Meanings of Ratings Categories

- SORTIES** — how many missions the pilot has been on. The more sorties he has been on the more likely he is to survive a mission but the worse his Fatigue rating.
- FATI. (Fatigue)** — current fatigue state. If they have flown several missions recently, they are fatigued and less competent.
- ACC. (Accuracy)** — how accurate they are at attacking any ground target with bombs, rockets and missiles when not fatigued.
- W.W. (Wild Weasel)** — how accurate they are at taking out GCI sites with Shrikes or Standards when not fatigued.
- D.F. (Dogfighting)** — how good they are against aircraft when not fatigued. All the pilots have this rating, but only Phantom pilots need it.

PERSONNEL DESCRIPTIONS

The following are abstracts of the fictional or real-life careers of the pilots named in the crew lists.

A-6 PILOT PERSONALITIES

Grafton/McPherson:

Combat Sorties:	92		
Fatigue Factor:	Good	Bombing Accuracy:	Good
Wild Weasel:	Poor	Dogfighting:	Poor

Lieutenant Jake "Cool Hand" Grafton is a Naval Academy graduate, at the top of his class. Grafton chose to fly A-6s instead of F-4s because he likes to fly "low in the mud where the action is." According to his skipper, he's steady and good. His BN, Lt. (j.g.) Morgan McPherson, is one of the best at being able to nail a target using radar. He's best-known for his ability to preplan missions, knowing the targets like the back of his hand. This team has been flying together for over two years.

Graustein/Wade:

Combat Sorties:	5		
Fatigue Factor:	Fair	Bombing Accuracy:	Bad
Wild Weasel:	Bad	Dogfighting:	Bad

Both Graustein and Wade are "New Guys," fresh from the Naval ROTC (Reserve Officers Training Corps). They're unproven and their skill sets are unknown. Wade is the BN, enthusiastic but green.

Lundeen/Greve:

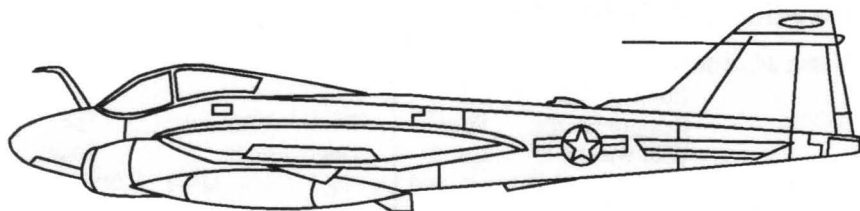
Combat Sorties:	31		
Fatigue Factor:	Bad	Bombing Accuracy:	Poor
Wild Weasel:	Fair	Dogfighting:	Poor

Lt. Sammy Lundeen is not only Grafton's roommate but also the squadron's personnel and awards officer. Tall for a pilot, Lundeen has a wacky sense of humor. Lt. Marty Greve is his bombardier-navigator.

Parker/Rockwell:

Combat Sorties:	38		
Fatigue Factor:	Poor	Bombing Accuracy:	Fair
Wild Weasel:	Bad	Dogfighting:	Poor

Lt. Commander Cowboy Parker has a lot of experience as the squadron's operations officer. He's popular with junior officers who respect his professional abilities and ability to take a joke. In addition, he's a good desk jockey and not a bad bomber who just needs some more time in the air to gain experience. Rockwell is his solid BN with a reputation for bombing gophers 50 feet off the deck at 500 knots.

**Ford/Walkwitz:**

Combat Sorties:	76		
Fatigue Factor:	Good	Bombing Accuracy:	Poor
Wild Weasel:	Fair	Dogfighting:	Bad

Lt. Nathan Ford is a tireless pilot. He attended the Naval Academy and he is on his second tour of duty. His BN, Lt. Bob "Boxman" Walkwitz, is the master of flip comment. He's best known for liking wine and women equally well. He even likes going against SAMs—because he thinks it's fun.

Campbell/Cole:

Combat Sorties:	131		
Fatigue Factor:	Fair	Bombing Accuracy:	Good
Wild Weasel:	Bad	Dogfighting:	Poor

Capt. Richard Campbell has flown many missions and is a tested pilot. His BN, Lt. Virgil "Tiger" Cole, counts among his medals the Distinguished Flying Cross after eight years in the Navy. After two combat cruises Cole became an instructor bombardier at VA-42. An Arizona native, Cole seems close-mouthed to all but his best friends. But when it comes to bombing, he's the best of the best.

Allen/Bartlett:

Combat Sorties:	7		
Fatigue Factor:	Poor	Bombing Accuracy:	Fair
Wild Weasel:	Poor	Dogfighting:	Bad

Lt. Richard Allen and his BN Bobby "Pear" Bartlett are another set of "New Guys." Bartlett, an Academy graduate, is a good BN and has a steady stick. Allen, though, is unproven yet.

Augie/Durfee:

Combat Sorties:	12		
Fatigue Factor:	Fair	Bombing Accuracy:	Poor
Wild Weasel:	Fair	Dogfighting:	Bad

Both Little Augie Odegard and Razor Durfee are Naval ROTC graduates. Razor, who's balding but with a moustache, would rather be in law school than flying jets. He's nervous and not terribly well-liked, but he is capable at his job of BN.

F-4 PILOT PERSONALITIES

Flynn Jr./John

Combat Sorties:	35		
Fatigue Factor:	Poor	Bombing Accuracy:	Fair
Wild Weasel:	Good	Dogfighting:	Poor

Lt. Cmdr. Johnathan "Errol" Flynn Jr. and Lt. (j.g.) Robin "Little" John have been specializing in Wild Weasel missions since the capability appeared. "Death to Radar" is John's battle cry. They are recent additions to the Shiloh's squadron; this is their second squadron in one tour as they first were New Guys in another carrier wing on a ship that just departed. Between their quickly-won expertise as "Weasels" and their short time on station before their previous ship was rotated home, the Admiral of Task Force 77 was happy to agree to their requested transfer to a ship that "was still fighting." Many of their new squadron mates are afraid that Flynn and John have not yet learned that war is a deadly business. They treat it as a game.

Hyde/White

Combat Sorties:	5		
Fatigue Factor:	Fair	Bombing Accuracy:	Poor
Wild Weasel:	Bad	Dogfighting:	Poor

Captain Rod "Hell Raiser" Hyde and Ens. Bob "Animal" White are new "nuggets" in the squadron. Hyde, a graduate of the Air Force Academy in 1967, is a U.S. Air Force F-4 driver on exchange duty. White is a recent graduate from the NROTC program. Considered to be a average team by fellow aviators, these two are best known for their shore leave charades. They are well-liked, fun, hardworking and dependable.

Tucker/Salibello

Combat Sorties:	131		
Fatigue Factor:	Fair	Bombing Accuracy:	Good
Wild Weasel:	Fair	Dogfighting:	Fair

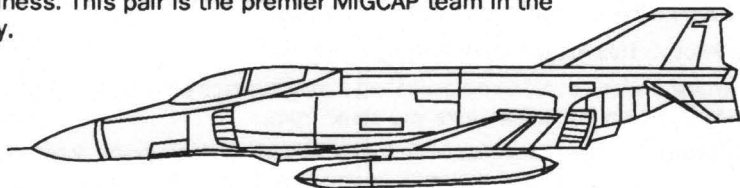
Commander Gene Tucker and Lt. (j.g.) Cosmo Salibello are credited with downing one MiG in their F-4J. A graduate from the Naval Academy, Tucker is considered one of the most experienced F-4 drivers in the Navy. This is Tucker's second tour of duty. Smart, well-respected, good at everything, and extremely committed to the job at hand, Tucker is a good leader.

Cunningham/Driscoll

Combat Sorties:	52		
Fatigue Factor:	Good	Bombing Accuracy:	Fair
Wild Weasel:	Poor	Dogfighting:	Good

Lt. Randy "Duke" Cunningham and Willie Driscoll, both graduates from the Navy's Fighter Weapons School ("Top Gun"), are the Navy's only aces of the war. On May 10, 1972, they managed to shoot down three MiG-17s with heaters (AIM-9 Sidewinders), including the North Vietnamese ace Colonel

Toon. Toon was credited with 13 American kills prior to May 10th. Cunningham is considered one of the best stick and rudder guys in the business. This pair is the premier MiGCAP team in the Navy.



Freeborn/Elliot

Combat Sorties:	82		
Fatigue Factor:	Bad	Bombing Accuracy:	Fair
Wild Weasel:	Poor	Dogfighting:	Fair

Lt. Freeborn and Elliot are credited with the second MiG-21 kill by the Navy. This feat was recorded on October 8, 1967 while flying with Davis and Elie who are credited with a MiG-21 kill during the same engagement. Freeborn is a good ACM guy with a keen pair of eyes; he flew the F-3H Demon prior to the F-4 and served as a Phantom instructor before his first tour.

Davis/Elie

Combat Sorties:	56		
Fatigue Factor:	Fair	Bombing Accuracy:	Poor
Wild Weasel:	Fair	Dogfighting:	Fair

LCDR Bob Davis and LCDR Gayle "Swede" Elie recorded the first Navy MiG-21 kill seconds before Freeborn and Elliot shot down the second one. Davis and Elie are an experienced pair with good dogfighting skills.

Beardsley/Joslin

Combat Sorties:	73		
Fatigue Factor:	Bad	Bombing Accuracy:	Good
Wild Weasel:	Fair	Dogfighting:	Fair

Lt. Bill "Burner" Beardsley and Lt. Mike Joslin are a solid air-to-ground crew. Both are very experienced and served their first tour aboard the *USS America* (CVA-66). Burner joined the Navy in 1965. Beardsley is a good stick and rudder man and has been accepted to the Blue Angels flying team. He has never been hit in combat.

Grant/Sullivan

Combat Sorties:	4		
Fatigue Factor:	Good	Bombing Accuracy:	Poor
Wild Weasel:	Bad	Dogfighting:	Bad

Lt. Grant and Lt. (j.g.) Sullivan are brand new replacements. As far as nuggets are concerned, these two are reasonable going air-to-ground. They are fresh and eager but they have a lot to learn, especially in ACM and anti-SAM missions.

FILE MENU

There have been several additions and changes in this menu, mostly having to do with the debriefing screens and use of the videotape.

Take Photo: This is the former Photograph option.

The following options can only be accessed during mission briefing or debriefing. Pressing **[Esc]** takes you back where you came from.

Slide Show: This allows you to go to the Debriefing Photograph screen to look at any photographs you have taken and saved.

Video Replay: This allows you to replay any previously saved videos.

Sierra Hotel: This shows you the current Top Ten list for the game.

Awards: This shows you what awards the pilot has already earned.

COMMS MENU

The **Communications Menu** presents you with three choices. Single Player is the default for playing against and with the computer alone. To use one of the other options you must have two computers connected through a null-modem serial cable (available at most computer supply stores). Sorry, we do not support modems with this game.

Using the Comms Screen

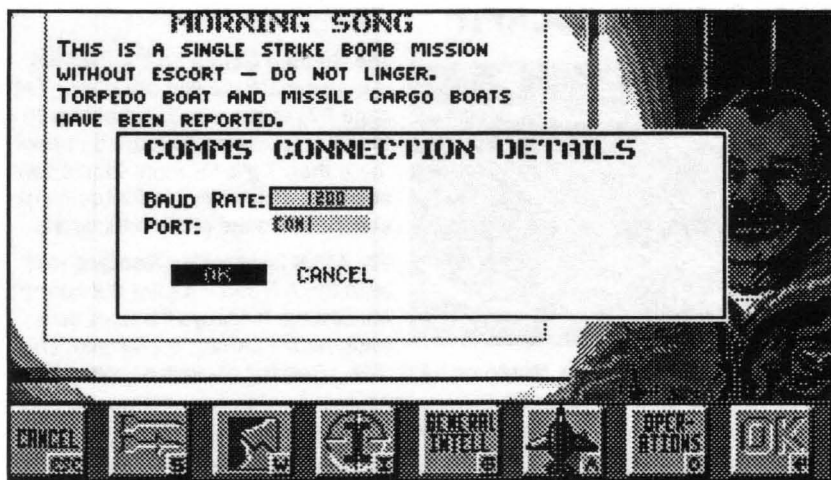
Before setting up two-player communications, you must decide on which operation you will fly. Both players should go to that Operation Screen. Then use the **Comms Menu** to determine which is the US Host and which the Terminal. The player with the faster computer should select US Host because his machine does most of the work. US Host also has more control of the game and options.

The Terminal player may use the menus to pick his own flight mode, level of detail, control method and weather conditions. (Yes, one player can be playing in clear weather and the other in bad weather. This is a gap in reality put in so that one player can play a more difficult game as a personal challenge.) The terminal player has no control over the mission planning (setting waypoints, etc.).

US Host This player can choose any aircraft at game beginning. He can switch to any other aircraft including the Terminal player's plane, but he cannot control the Terminal player's plane.

Terminal Once the connection described below is made, the terminal player may choose one plane from the rest. The US Host player can fly any of the other planes at any time. The terminal player can fly as the US Host player's wingman or fly in one plane from a separate element. Alternately, he can fly as a MiG. Once he has picked an aircraft, he must stay in it. It will not fly on autopilot. If it is an American plane, the US Host player can enter it but cannot control it.

If the Terminal player picks a MiG, he must fly with collisions on and limited engine, armaments and fuel. Also, his cockpit looks and operates like that of an F-4.



The Comms Connection Details Screen

Once you have finished setting up the mission to your mutual liking, the same screen comes up for both the US Host and the Terminal computer.

- ☛ **Baud Rate** Use and to select a baud rate. Both players should pick the same baud rate.
- ☛ **Port** Use and to select the port the cable is connected to. Each player picks the port appropriate to his machine.
- ☛ **Cancel** Press to leave this dialog box without attempting a connection.

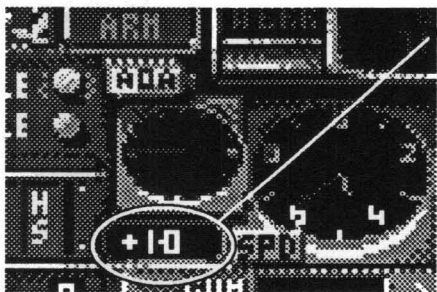
Once either of the players is shot down, the game is over.

LEVEL, CONTROL AND OPTIONS MENUS

Once you set your preferences for type of sound on the **File Menu**, choose a level to fly at on the **Level Menu** and/or customize your style of flying by using the **Options Menu** (pages 74–77), and specify your amount of sound preferences on the **Control Menu**, the game saves your preferences to go with the name and callsign you chose when you finish the mission and return to the Duty Roster. The next time you pick that name and callsign, the game defaults to the choices you made for that name in the previous mission. If you want to fly at a different level, you can either:

1. Rechoose the options, which the computer will attach to the name for future missions, or
2. Pick a different pilot name and callsign and set up a different options package for that name.

READING THE COCKPIT



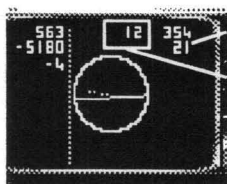
The G-Force Gauge on the F-4 tells you how many g's you are pulling (see page 97) at any time. Remember that the Phantom is not designed to take more than 7 g's for more than a few seconds. Too many g's for too many seconds and the plane falls apart.

The MILS Depression Reading tells both the A-6 and F-4 pilot the current Mil setting. It always displays zero until the Mil setting is changed. (The

Mils display is not blank as stated on page 118.) See the cockpit display on the enclosed Reference Card.

The EMIT light on the A-6 or the ECM light on the F-4 will illuminate if you turn on the ECM pod. If you have an ECM pod, toggle it on by pressing **[E]**. See the cockpit display on the enclosed Reference Card.

READING THE PHANTOM RADAR SCREEN (PAGE 107)



This measurement is in nautical miles (see page 93).

When the radar is showing the distance to a flying target, a number appears here showing the altitude of the target in 1,000s of feet.

If you have selected Medium or Hard Targets from the **Options Menu**, you will not get any information on potential targets until you have a radar lock. Navigation information (relative bearing and distance to waypoint) will not show up if you have activated your air-to-air weaponry with **[Enter]**. Instead, the spaces will be filled with XXs.

The HUD Dot

We added a green dot to the Heads-Up Display (HUD) on the front wind screen of both airplanes. This dot shows you your current stick position; it is provided as a convenience for mouse users and a reminder for joystick and keyboard users.

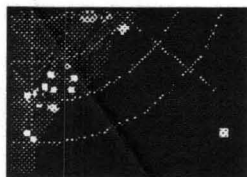
The Phantom Cannon

To properly simulate the lack of a gun in the Phantom, players who have chosen the Limited Arms option have *no* ammunition for their gun. This is the default setting if you are flying at the Lt. Commander, Commander and Captain level.

Reading the COMED

In EGA or VGA the colored dots on the COMED screen represent:

Red	SAM Site
Blue/Cyan	Airfield
White	AAA Site
Yellow	GCI
Grey	Targets/built-up areas
Pulsing Dot	You
Pulsing Blue Dot	Most recent enemy plane reported by Red Crown



SAVING PICTURES AND OPERATIONS

If you want to save snapshots and videos taken during a mission on a floppy disk because you either do not have a hard disk or do not want to clutter up your hard disk, you must create a photo disk. Format a floppy disk; copy PHOTO_ _ . SEQ from the game disk onto the new disk. Rename the old PHOTO_ _ . SEQ file on the game disk (see A3 for how to do this.) to keep the computer from getting confused.

Similarly, if you want to save the operations you devise as the CAG, format another disk and copy * . OPA onto that disk. Rename * . OPA on the game disk.

SOME QUICK CORRECTIONS TO THE MANUAL

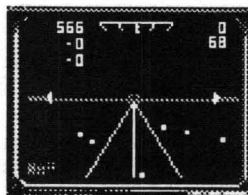
- Page 19** The first time you press **[Spacebar]** "pickles" the target by locking the radar on to it; The "LOCKED" light below the radar screen lights up. (On the F-4, the same "LOCK" light you use with the Sparrow also lights up with the Walleye.) Pressing **[Spacebar]** a second time actually fires the missile to attack its pickled target.
- Page 38** The MiG CAP and Escort fighters should leave the ship after the bombers. They are faster and will arrive over the target first. Plan your missions with the bombers leaving first. Sections of aircraft should be spaced at least a minute apart. If you do not do this, the computer will.
- Page 41** Local Ground Activity does not measure the amount of air-to-ground weaponry on the site. It measures how much movement of trucks, trains, and boats is going on in the area.
- Page 49** The Iron Hand missions do use Shrikes against AAA radars. Escorts do attack MiG targets, not just ground targets.
- Page 87** The empty red box on the Threat Indicator indicates any ground radar. The filled red boxes mean there is a SAM in the air.
- Page 91** The F-4's radar circle does not change size.

BOMBING TECHNIQUES

USING DIANE

The DIANE is the heart of the A-6. It is both a navigation and a bombing device. When it is in operation, the radar screen of the A-6 looks like this:

The tripod indicates the direction to the next waypoint. Think of it as the highway ahead of you on a trip. If the centerline moves away from straight ahead, turn the plane to follow the centerline. The horizontal line running across the screen indicates



the horizon.

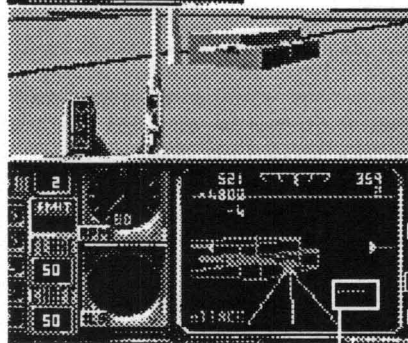
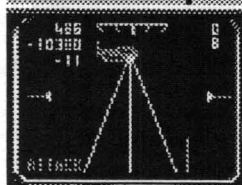
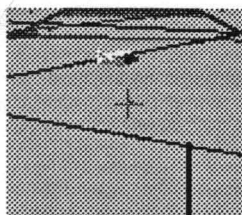
When the square at the top of the tripod moves off the bottom of the screen, select **[:]** to set the DIANE for the next waypoint.

When ATTACK appears at the bottom of the screen, you're approaching the target. Press **[7]** on the top row of the keyboard to go to the Weapon Select Screen. Select whatever bombs you are carrying with **[Backspace]**, select Ripple for the bomb release method with **[PgUp]**, and DIANE for your bomb release method with **[End]**.

Dive toward the target from 10,000–15,000 feet or fly level at that height. The square at the top of the tripod

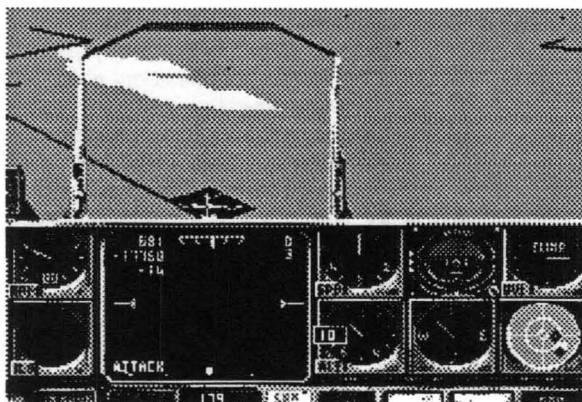
fills in to indicate the target and follows the picture on the radar screen. At the same time, a horizontal bar appears on the right side of the screen. When that bar hits the bottom of the screen, hit **[Spacebar]** to release your bombs.

Note that the horizon line has disappeared from the screen. This is because the plane is diving on the target. If the plane was keeping a level approach, the horizon line might still be on the screen, but the tripod would be focused on the target. The tripod's function is to show the point the plane is going to, not the direction of the plane's travel.



Horizontal Bar

USING DIRECT



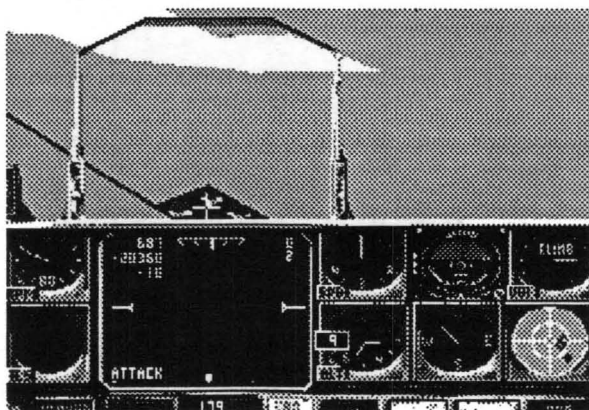
This is very difficult and takes a great deal of practice. The simplest method is a straight approach toward the target.

Before starting the attack, you need to choose the release parameters: speed, height and angle of dive.

From this selection, you can find the mil setting in the tables on pages 120–121.

For instance, for 450 kts, an altitude of 8,000 ft and a dive angle of 60 degrees, the mil setting is 112.

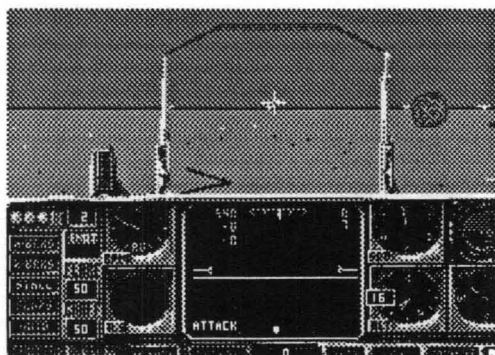
In the cockpit the mil setting is achieved using **I** and **M**. **(Shift)** can be used in conjunction with these keys for a faster change. As the keys are pressed, you should see the aiming sight in the simple HUD (Head-Up Display) move up and down. The actual mil reading is shown on the display below the radar screen. When you are not using this method of bombing, the display reads "0" (zero).



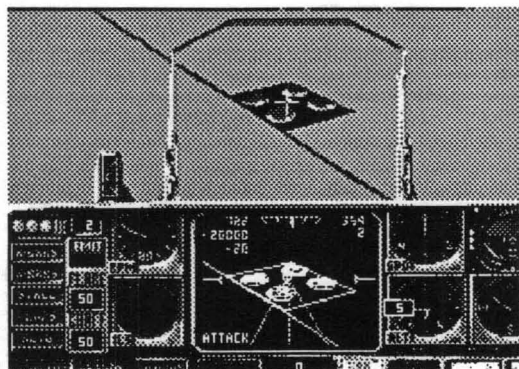
Set the mils as shown in the example above. Approach the target at about 8,500 ft and a speed of 400–420 kts. If using keyboard flight controls, use the sensitivity keys, **(F3)** and **(F4)**, to change the sensitivity to maximum. When the range figure in the upper right of the screen hits one mile, push the stick forward quickly and get the sights on the target.

Coordination is needed here because you must hit **(Spacebar)** when the sight is on the target, the altitude is 8,000 ft, the speed is 450 kts, and the dive angle is 60°. The dive angle should be taken care of by diving at a range of one mile. Direct attack is difficult and easy to miss by many feet, so it is a good idea to ripple the bombs to get the best chance to hit.

USING DIVE-TOSS

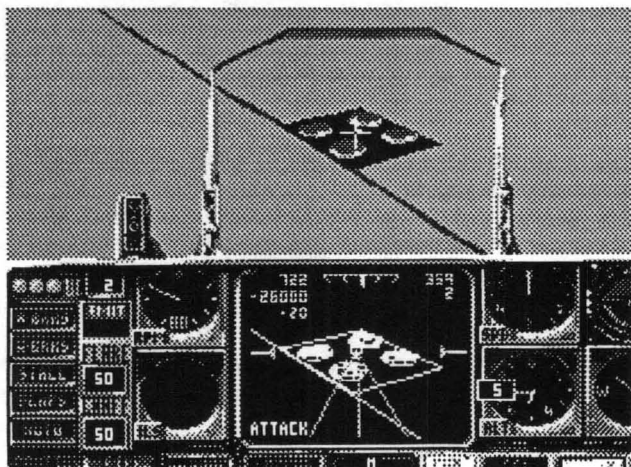


The setup for dive toss is very similar to direct dive bombing. You do not have to worry about being as precise about dive angle, speed, and altitude, but your accuracy is also impaired. Circle the target at 10,000–15,000 ft and then turn and dive toward your bombing objective, using any dive angle you wish. When your wings are brought level after turning towards the target, point directly at the target. The bombsight should be directly over the ground object.



Press **[Spacebar]** and pull up. The bombs are released automatically.

This technique works for any form of iron bomb including retarded fall munitions like the Mk82S Snakeye.



Debriefing—The VCR (use **V**)

There are 5 icons associated with the video replay device.

P	Plays the tape
→	Moves you to the next sequence on the videotape
S	Allows you to save the tape (tape name can only have six letters)
L	Allows you to load a saved tape
Enter	Takes you out of the VCR Screen

During Videotape playback, you can change to outside and tracking views, zoom in and out, change the vertical and horizontal orientation, and fast forward by using **Tab**. You can get out of the playback at any time by pressing **Esc**.

Debriefing — The Photographs (use **PrtSc**)

You can use the arrow keys to pan around a picture you took during your mission. The knob in the bottom right corner of the monitor shows a letter corresponding to the photo.

Debriefing Screen and Sierra Hotel

The multiplier given for scores on page 77 is off by one decimal place. Divide all the numbers by 10. Thus, the rank multiplier of a Lt. j.g. is 1, not 10, and the Captain's rank multiplier is 5 instead of 50.

You may get a high score on the Debriefing Screen but a lower one on the Sierra Hotel screen. The Sierra Hotel score is the average of all the scores for that pilot. If you have one very good mission and a series of mediocre ones, your Sierra Hotel score steadily declines and your place on the list also declines, depending on how many pilots are being played in that game.

If a pilot name is "retired" by being changed (even from Rookie to your own handle), the name may still appear on the Sierra Hotel listing because its score before retirement is high enough to warrant a listing. If you do badly in your initial missions and you have no points yet, you may find the Rookie you "replaced" is still on the Sierra Hotel list and you are not.

Court-Martial

If a pilot violates the Rules of Engagement, he might be court-martialled. In this game, this means that that pilot is cashiered out of the Navy. The likelihood of being court-martialled increases with the level of difficulty as set on the **Options Menu**. If you fly at Captain level, but all of your options are set to Unlimited Arms (that is, no checkmark next to Limited Arms) and similar values, then the computer realizes you are just playing a game and does not call you to account for your violations of the Rules of Engagement.

Besides violating the Rules of Engagement, you might be court-martialled (if you are flying at a high level of enemy activity) for:

1. Attacking your own ships.
2. Attacking your own planes.
3. Ejecting if you have sustained no damage.

If you are court-martialled, you can start a new pilot with the same name and callsign, but that pilot has none of the points accrued by his namesake.

KEYBOARD AND OTHER INTERFACES

Corrections and clarifications for the keyboard

The enclosed separate Reference Card shows all the correct uses for the keys.

-  **S** This key toggles the sound between the options found on the Control Menu. Once you have picked the type of sound you want from the File Menu, you can use this key during the game to toggle between "All Sound On," "Engines Off" and "All Sound Off."
-  **Enter** This key does not toggle between air-to-air weapons on the F-4; instead, it toggles between weapon *stations*. This is why you may have to hit this key more than once to go from another weapon to the Sparrow AIM 7. The Sparrow does not count as a normal store on the plane because it has its own dedicated stations; other ordnance cannot be loaded on these stations. If the weapon selector starts on Heat, for instance, it first cycles past the two stations that could carry Sidewinders, then checks the guns, and then looks to the Sparrows.
-  **H** Press  **H** to activate the hook on landing. Without the hook down, your plane cannot catch the arrestor wire.

Selecting an icon with the keyboard

-  Instead of pressing the particular key (such as  **I** for Information) you can use  **Tab** to move the highlight from one icon to the other and then press  **Spacebar** to select the icon you are highlighting.

Using the mouse and joystick

-  To recalibrate your mouse, choose Recalibrate from the Control Menu. The further you move the mouse when instructed to do so, the less sensitive the mouse will be. You can center the mouse by clicking the left button.
-  The fire button (button A) on the joystick and the left button on the mouse fire weapons just as  **Spacebar** does on the keyboard.
-  Button B on the joystick and the right button on the mouse can be used for rudder turns, as described below.
-  The center button on a mouse centers the stick without having to drag it back to the center position on the HUD.
-  The "Stick & Throttle" option is for joysticks with throttle controls, such as the CH FlightStick. It operates the same as a regular joystick except that the throttle device acts to increase and decrease the plane's RPM.

Level turning (Using the rudder)

- ☛ Press **Ctrl** **4** to make a level turn (without banking) to the left and **Ctrl** **6** to make a level turn to the right. This simulates the effect of the plane's tail rudder. The turn will not be as sharp as a banked turn, but will give you a stable platform and no loss of altitude. Hold down the right button on the mouse or button B on the joystick to accomplish the same purpose.
- ☛ If you are using the "Stick & Rudder" option, you must have two joysticks. The two joysticks may be set up either through a Y-cable or two game ports. The right stick is for flying the plane and weapon-firing; the left stick is for controlling the throttle in the vertical axis and making rudder turns in the horizontal axis.
- ☛ Calibrate the first of these two joysticks normally.
- ☛ Calibrate the second stick by:
 1. Bringing the stick directly back, centering it, and then pressing the fire button.
 2. Then pushing the stick to the upper right, then pressing the fire button.

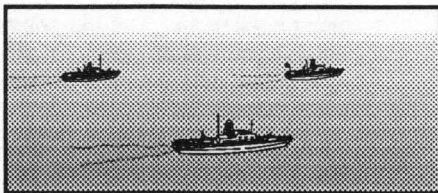
Autopilot

- ☛ Press **A** if you want the plane to fly itself but allow you control of the weapons. In this mode the plane will not fire its weapons unless you arm them, select them and trigger them. In short, you are acting as the RIO or B/N while the computer plays pilot.
- ☛ Press **Shift** **A** if you want the plane to fly itself and use its weapons automatically. Planes that you are not personally flying operate this way.

MISSION ADDITIONS AND CHANGES

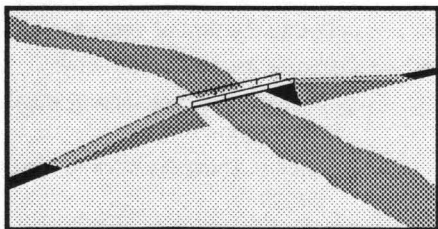
Operation: DECK ALERT

A-6s are not available for this mission. You will need to use a section of F-4s.



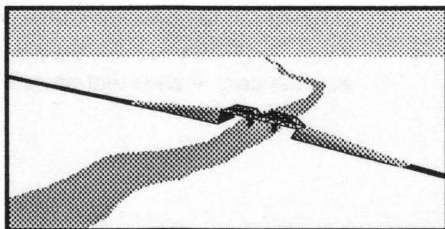
Operation: TALLY HO YO

A section of A-6s has been assigned to the Iron Hand mission. You are being given a section of F-4s for TARCAP and another for ESCORT because MiG activity is high.



Operation: BACK BREAKER

Because of higher levels of MiG activity than originally anticipated, you are being given an additional section of F-4s for Escort duty.



SOME ANSWERS TO COMMON QUESTIONS

Five Minutes To Play card

- Q. Where is the "Five Minutes To Play" card mentioned on page 9?
- A. *After writing the manual and sending it to the printer, we realized that we already had quick-learning directions in the First Intruder Mission (page 11) and First Phantom Mission (page 25).*

Using the menus

- Q. How do I get to the menus?
- A. *Press **F10** to get to the menus. See page 73.*
- Q. I started my mission and tried to pick from the Options Menu and it was all greyed out. How do I use the menus?
- A. *You have to make your Level, Options, and Comms choices **before** actually starting the mission. Once you are in the cockpit, those options are no longer available.*
- Q. I'm playing in CGA and trying to get a bad weather mission, but I can't do it.
- A. *Sorry, but CGA graphics don't permit the bad weather graphics to be used.*

Cockpit views

- Q. What does the SAM Warning Light mean (page 87)? Also, the Missile Light just comes on, but it doesn't flash.
- A. *This was a change. The SAM warning light means a SAM site radar has found you. The Missile warning light means that there is a missile in the air, looking for you.*
- Q. Why does my viewpoint out the front of the cockpit change to a lower-looking one when I drop my landing gear for landing?
- A. *This gives you a viewpoint more in common with what an actual pilot is looking at when making a carrier landing.*
- Q. Why is my Phantom radar screen full of static?
- A. *The radar picks up a lot of ground clutter when it is pointed at the ground. This does not happen in CGA mode.*
- Q. Shouldn't we have some kind of IFF (Identification Friend or Foe) indicator to show what planes around are our friends and which are foes?
- A. *The IFF in every plane was turned off over Vietnam. It not only told your friends who you were, it told the Vietnamese.*
- Q. I thought my wingman would show up on the threat indicator as a hollow square. I don't see him.
- A. *Your threat indicator (or Radar Warning Receiver — RWR) only registers radars that are detecting you. Your wingman's radar defaults to being turned off. If you want to see him, use **Shift** **9** to go into his cockpit, press **R** and then go back to the leader's cockpit.*
- Q. What does "UC" mean next to the landing gear lights in the Phantom and Intruder cockpits (page 84, 85 and 91)?
- A. *Under Carriage.*

- Q. Why does the waypoint information on the radar screen of my F-4 not always agree with the waypoint information on the [F5] and other outside views?
- A. If your F-4 is in air-to-air mode (you have pressed [Enter] to activate air-to-air weapons), it displays the bearing and distance to the next target, not the next waypoint. If you are using Medium or Hard Targets, these fields are filled with Xs until you get a radar lock on the target.

CAG Operations

- Q. I've put together my own CAG mission. How do I save it for future reference?
- A. When you have the mission finalized, press [T], which takes you back to the target screen. Press [S] and enter the name you have chosen for the mission. Ignore the target name highlighted on the Target screen as it has no effect on what you are saving.

Navigation

- Q. How do I find the carrier when I want to go home?
- A. Press [F5] or [F6] to go to an outside view. Toggle [Shift][;] until the waypoint entry says "Carrier," and you will see the distance and bearing to the carrier **from your current direction**. (This is known as the offset.) Similarly, you can find the current location of your wingman by looking at the bearing and distance when the waypoint entry says "Buddy." If you want to use the autopilot to get you back to the carrier, use [A] to toggle off the autopilot, go to the [F5] screen and use [;] to toggle the waypoints to "LAND" and then toggle the autopilot on again.
- Q. I'm trying to edit a waypoint to order Iron Hand and Wild Weasel as a CAG, but I can't find a command to fire Shrikes and Standards; there is no command for any kind of Combat Air Patrol (CAP) either.
- A. Use "Circle" for any action that involves the plane hanging around an area and looking for targets. Here are some other definitions:
- Jink:* Travel using lots of hard turns to throw off AAA and SAMs.
- No Jink:* Travel in as straight a line as possible.
- Combat Form:* Travel in side-by-side loose formation to give you more freedom of action in case of a dogfight.
- Cruise Form:* Travel with the wingman tucked in behind and to the right of the leader to give the smallest target to radar.
- Land:* Land on the carrier.
- Weave:* The wingman is behind the leader weaving from side to side to inspect the section's six.
- Q. But how about the waypoint listings you get with [:] in the [F5], [F6], [F8] and [F9] views?
- A. There are some special waypoint listings there to help you find your waypoints and friends. The [:] toggles between three readings:
- Buddy:* This gives you the offset from your current bearing and miles to your wingman.
- Carrier:* This gives you the offset from your current bearing and miles to your carrier.

Next Waypoint: This is the default setting, and tells you what function you are to perform at the next waypoint when you reach it. These terms are the same as those set in the Waypoint screen (pages 42–42).

Carrier landings

- Q. I landed on my carrier. Why does the picture of me and my buddy showed me daubed with paint?
- A. You **think** you landed on your carrier. You actually landed on the other carrier at Yankee Station. The paint is the hazing for making this mistake.
- Q. I'm trying to land on the carrier, and the meatball won't work.
- A. You activate the ACLS (Automatic Carrier Landing System) by pressing **[F7]**. Check the ACLS dial (the normally blank dial down and to the right of the F-4 radar screen and to the left of the A-6 radar screen) to see if it has the cross-hairs described on page 88 of the manual. If it doesn't, the ACLS is not on. Confusingly, the dial is labelled ILS (for Instrument Landing System), but that's the Navy for you.
- Q. Now that I am looking at page 88, how do I set the Sensitivity referred to at the bottom of the page?
- A. Use **[F3]** and **[F4]** to set the Sensitivity.
- Q. Speaking of landings, my AOA isn't lighting up when I approach (page 87).
- A. You are probably coming in too fast or too slow. The AOA only gives you information when you are making a correctable approach. If the AOA is not lit, you are probably coming in too fast. If you are coming in too slow, you are probably stalling out anyway. If you stall out, you are too slow. Oh, yes, you need to activate the ACLS with the **[F7]** for this to work, too.
- Q. I obviously need to practice my landings, but I can't find "Testland" on the mission list.
- A. Go to the Target Selection Screen (the first screen to appear when you pick "CAG Brief"), press **[L]** to load in a saved operation, and enter "Testland" in the dialog box. (You can just erase any operation name already entered.) Please ignore the "Error: No Target" message.

Debriefing

- Q. Now that I've landed, how do I know how good my landing was? Where are these colored disks?
- A. Look under the "Duty" in "Duty Pilot Landings." The rating for your most recent landings are shown by colored disk(s) enclosed in brackets.
- Q. I violated the Rules of Engagement. Why was I not court-martialed?
- A. You were flying at Lt. (j.g.) or Lt. level. Much is forgiven at these levels. You can also turn off the Rules of Engagement on the **Controls Menu** at any level.

Using the weapons

- Q. I'm all lined up on my target and pushing **[Spacebar]**, but the weapons don't fire. What's wrong?
- A. *To use any weapon, you must press **[Home]** (Tandy users, the **[7]** on the number pad) to arm it. If the weapon is not armed, it will not fire. If you arm your weapons switch to autopilot and switch back, the weapons are not armed until you arm them again.*

Bailing Out

- Q. Every time I hit **[Ctrl][E]** to eject, I get killed. What's going on?
- A. *It is possible to survive an ejection. However, if you eject for no reason at a high level, you are automatically court-martialled and no longer on the Duty Roster lists. Also, if you eject over land or the immediate off-shore areas, you are assumed to be captured and out of the game. Also, there is a possibility you just will not survive the ejection. Many pilots did not.*

Scoring

- Q. The scoring method shown on page 77 seems to be off by a decimal point. Shouldn't the Rank Modifiers be a lot smaller than shown?
- A. *You're right: all the adjustments should be divided by 10, so they are all decimals. Also, the High Enemy Activity modifier listed under the Captain rank is wrong. The number should be 1.4, not .4. This gives you an idea of how much nastier the enemy pilots and AA are at the highest level.*

Combat hints

- Q. How do I know when I've shot down a MiG?
- A. *It goes straight down with puffs of smoke coming from its tail.*

Game Speed

- Q. How can I make the game run a bit faster?
- A. *Using PC Tone speeds up your frame rate and makes the game run faster. So does turning off "Large Scale" on the **Control Menu**.*

ASSEMBLY BUILDING IN HANOI LEVELED!**Rules Of Engagement Violated!**

The following narrative is from Mike "Moondawg" Weksler, who tried to duplicate Jake Grafton's attempt to bomb the National Assembly Building in downtown Hanoi. One note: "No. 19" is the callsign of Spectrum HoloByte's Development Services Manager, Marisa Ong — hence the references to a supposed Vietnam-era bomber pilot as "she."

On 19 June , 02:00, I go to ready room for mission planning. Make sure to hit F10 and select Captain, the proper control device, and other applicable options. After pressing the Escape key, I enter my callsign as "Devil, 50" on the duty roster and proceed to target selection.

I select the Power station in Hanoi, with the secondary target being the SAM site 180 south of Hanoi. I review the photo of the power station and hand the coordinates to my Bombardier/ Navigator (B/N), Virgil "Tiger" Cole, for later programming into the navigation computer.

I save this, exit out and when everyone has left, go back to get info on the real objective of this mission: the Assembly Building in downtown Hanoi. "Too many lives were being sacrificed for worthless targets such as 'suspected truck parks,' I think as I reflect on "Morg." (Morgan McPherson flew with me on a "truck park" mission. We had flown together for two years. He was my friend. A stray bullet killed him on that run.)

I note the coordinates for the Assembly Building and load up my original target file to review the information. Target intelligence provides a map and photos of the power station, but no photos of the SAM site — just a spot on the map.

We review general intelligence. This shows that the MiG activity in the vicinity of the primary target is high and Ground activity low.

But after we bomb the primary target we're going to violate the Rules of Engagement and take out that Assembly Building in downtown Hanoi. From the intelligence I can gather for the Hanoi area, I can see that all enemy activity would be high. I give Tiger the target info, we grab some coffee and then go through the routine of donning our flight gear.

On the flight deck, Tiger punches in the waypoints for the power plant strike; but then he adds the waypoint to the Assembly building with the waypoint editor.

At the first waypoint, he changes the altitude to 500 ft and sets the action to ripple bombs to make it look like we're gonna dump it all on the primary target. The second waypoint is also changed to 500 ft and ripple bombs. If we have to, we'll page to the other A-6 and our bird will fly to the Assembly Building on its own. He then tabs the Next Section icon and is pleased to see that we are the only section on this mission. This means we can leave the primary target area relatively unnoticed and fly to Hanoi.

I can see No. 19, my wingman for this mission and her B/N, Greve, going over last minute details on their bird. I approach the Ordies and proceed to go over the ordnance with the Chief. I offer to take him up on a joyride later if he agrees to issue us some of the 2000 pounders, instead of the standard strike load of ten Mk82s, one Paveway, and two Walleye's.

He agrees and we load up with five Mk84s to penetrate the heavy duty concrete of the assembly building. This leaves no room for the ALQ radar jamming pod so

we'll be flying very low. Tiger makes some remark about pruning treetops, but I'm too nervous to quip back.

It's now 0215. As we ready for the flight, I choose the A Icon to insure we're launching at 0230 and we're set up for a bombing run.

I run through the pre-flight checklist (double checking every waypoint and action) and Tiger checks his equipment out.

I salute the cat officer and with a war whoop hit the Ctrl-L keys. Soon I'm flying at 8 KIAS above my stall speed. No wind tonight and the carrier is steaming at 20 kts — barely enough to get us up. "At least the weather is calm," I think.

I raise the gear and flaps. Soon, with the aid of the Tab key to accelerate the time rate, we are at 325 kias at 25,000 feet. "We're gonna have to go nice and slow on ingress to save fuel," I say to Tiger. He clicks his mike in response. I page to No. 19 in Devil 502 just as she is launching.

I can see my jet climbing out of her cockpit. "No transcendental meditation would let me do this" I murmur. Greve was having problems with his NAV and targeting computer. DIANE was on the blink, and he would have to bomb direct. I page back to my jet.

At 74 nms from Downtown I start descent and go through the master arm checklist. At 500' I level off and call feet wet. By staying low and flying "up the river," we seem to have avoided the enemy. They know we're coming and my warning lights are all lit up, but they can't get a lock on us as we blend into the ground return. The terrain is so flat that we frequently fly below 200'. No tracers, no nothing. Can't hit the Tab key because we'd hit the ground. We approach the target. I let Devil 502 go in first because she can strike lower than us because we have Mk84s. I climb up to 2000' and Tiger says that the pickle is hot. I watch Devil 502 take out the target. "Better go in and drop one off for good measure," Tiger says. I climb higher then dive at the target. The attack indicator lights up and I watch the little block in my VDT move closer to the center. It starts to fill in and as I fly closer to the target, the horizontal release indicator comes on. When it hits the bottom of the screen, I release and place the 2000 pounder right in the boiler. We feel the turbulence of the blast as we destroy what's left of the target.

Tracers light up the sky, but I fly over them like a high jumper just clearing the bar. I can't get below 2000' until we are clear of the target area. We still have four 2000 pounders left for the Assembly Building. "We'd better get down to business," Tiger murmurs.

I page to Devil 502, hit the  until the waypoint reads "Land" and invoke her ILS with the F7 key. Then I switch back to my lead position.

It comes as no surprise when Devil 502 radios to me with a system malfunction. Something is wrong with her NAV computer and she is going to bug out. I radio back that I am enroute to the SAM site south of the Hanoi but have to change course to avoid some AAA. We are now alone.

So far, no enemy aircraft on RWR. All clear on ingress to Hanoi. As we approach the city, I climb up to 4000' and Tiger pinpoints the Assembly Building. He says, "Your pickle is hot," and I dive for the target. It looked just like the Intelligence I had acquired. "This one is for you, Morg!" I think as I squeeze the release button. All of the Mk84s hit their target. We feel the repercussions from the explosions as distinct thuds violently shake our aircraft.

I realize I flew too low. The damage warnings light up the B/N panel. Either our

own bomb explosions got us or the AAA has us locked. I can see tracers. so I hug the ground so close I'm afraid I'll snag a clothesline. Circling around to make sure the building is destroyed, I see that I've unfortunately taken out the next-door building too. I only wanted to damage the leadership. Hope no civilians were in that next building.

I hit the [] to start egress. When we are clear of enemy fire, we survey the damage. The COMED is useless; the radar must have taken the damage. However, the NAV computer is still functioning enough to guide our autopilot back to the landing waypoint on the Shiloh.

I throttle to full Mil power, hugging the ground and managing to somehow extend on the bogies scrambling to intercept us. Tiger breaks the silence with a "Fancy shootin' pardner," as we head for the coast; we know we've disturbed a wasp's nest; now they are going to buzz around our faces, ready to sting.

I page to Devil 502 as she calls feet wet. She must have run into some MiGs or taken a SAM hit or something... Everything is Foxtrot Uniform in this bird. The COMED is just black. Somehow, it is still flying. I page back to my own A-6.

"What are you doing popping in and out of here all the time?" Tiger growls. "Don't you know the autopilot makes us climb? I was a sitting duck while you were gone!" He's right. My panel shows a SAM launch. Talk about pucker factor! A second SAM launches before I can dive into the ground return. "Jake, it's closin' fast... Five o'clock!" I dump some chaff and almost fly the bird into the ground. I black out as I pull up but am still in control.

When my vision clears the first SAM is gone. Must have hit the ground as we pulled out of the dive. We're now off course at angels 2. The second SAM is still closing. I hit the chaff button and dump as much as I can. Multiple bogies are still closing. Almost to the coast now. I dump more chaff and jink out of the way of the remaining SAM as it goes off guidance. We can see the SAM go right past the right wing. "Get down!" Tiger yells at me.

I skim the trees the rest of the way back to the coast. I blend in with the ground return and fly along the river. No further SAM launches. The AAA light is still lit, but I know they can no longer single me out of the ground return.

I call Feet Wet and start my ascent. I know that when I get back I'm going to catch hell for this. Maybe even a court martial in the Debriefing mode. "Bingo fuel," is all that Tiger says as he reminds me to throttle back. At angels 2, all I can wish for is the KA-6 to fly by and give us a fill-up, but I know that it's not flying. I hit the autopilot and and sit back, pressing the Tab key.

I avoid paging Devil 502 because if it lands while I'm in it, the mission is over. Checking every way out of my own cockpit shows no sign of my wingman. "Must be on final," I think.

The sky is clear and we seem to be the last ones up. I invoke the ILS with the F7 key and line up my needles. Tiger and I remain silent. The LSO doesn't even ask me to call the ball. OK, throttle back, flaps, gear and hook down. Needles lined up, I can see the meatball. I'm too low. Climbing. Now I'm too high. Can't seem to line up. KIAS is 174 and I'm 400'. Needles high and center, fuel 1000 pounds. I shove the nose forward and hit the deck with a force that we both are sure will push the landing gear struts through the wings! Then we feel the reassuring tug of the number four wire and start to breathe again.

Devil 501, over, out.

FURTHER READING

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